

# CS 110 Discussion

## Week 1

March 3, 2020

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- 1 Linux Setup
- 2 Virtual Machine
- 3 GCC
- 4 GNU Make
- 5 Zoom
- 6 Autolab

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- Linux is just a kernel.
- Many user space applications are from GNU.
- You might wish to install a specific Linux distribution.

## Definition

A Linux distribution (often abbreviated as distro) is an operating system made from a software collection that is based upon the Linux kernel and, often, a package management system.

# Linux Distribution

List of well-known distros:

- Debian  debian
  - Ubuntu  ubuntu
- Fedora  fedora
  - Red Hat Enterprise Linux (RHEL)  **Red Hat**  
Enterprise Linux
  - CentOS  **CentOS**
- Arch Linux  archlinux.
  - Manjaro Linux  manjaro

# Install Linux

Choose your favourite Linux distro and follow the instruction on their official website.

Usually you need to burn a USB disk.

# NVIDIA and Linux

NVIDIA is notorious for lack of support for Linux.  
You should be careful if you have an NVIDIA card.  
Especially if you wish to install graphical user interface (GUI).





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- A very good alternative if you do not wish to install Linux on real devices.
- Recommend software:
  - Windows: VMware Workstation
  - Mac: VMware Fusion

- VMware Workstation has a free version: VMware Workstation Player.
- Some functions are exclusive on Workstation (e.g. snapshots).
- You can create a VM in Workstation and import it into Player.

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- Short for GNU Compiler Collection.
- We will only use the C compiler (`gcc`) and C++ compiler (`g++`).
- [What is the difference between `g++` and `gcc`? - Stack Overflow](#)

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GNU Make is a tool which controls the generation of executables and other non-source files of a program from the program's source files.

Simple syntax:

```
target: dependencies ...  
    commands ...
```

## Important

Do not forget a tab (`\t`) before each command.

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- Our online judge system.
- [Demo site](#).